

Northwest Indian Fisheries Commission Grant Program

FY 2012 Noncompetitive Tribal Projects for Restoration and Protection of Puget Sound

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Grant Name:	NWIFC FY 2012 Noncompetitive Tribal Projects for Restoration and Protection of Puget Sound
Project Period:	June 1, 2011 – September 30, 2015
Project Officer Name and Address:	Tiffany J. Waters Northwest Indian Fisheries Commission 6730 Martin Way East Olympia, WA 98516
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1. **Project Title:** Coast Salish Tribal Journey Water Quality Project (TJWQP)

2. **Work Plan Abstract:**

Since 2008, the Coast Salish Nation and Swinomish Indian Tribal Community in partnership with the U.S. Geological Survey (USGS) has examined the coastal waters of the Salish Sea providing a new strategy that blends western science and Coast Salish culture to study water-quality and its effects on ecosystem dynamics. The foundation of the study is the annual Tribal Journey, whereby canoe families traveling their ancestral highways collect surface-water samples producing multiple simultaneous water property profiles across the Salish Sea. The results are disseminated near real-time via the web (www.usgs.gov/coastsalish) helping to identify impaired water bodies (e.g. algae blooms) and conditions worthy of subsequent study. In addition to *in-situ* water samples, canoe pullers and scientists, traveling together, collect observational data providing context for the quantitative data. Local indigenous knowledge shared during the Journey helps guide the TJWQP's focus and provides unprecedented opportunities to learn about the Salish Sea's natural history in ways science alone can not offer. The exchanges made between science and traditional knowledge within indigenous communities along the Journey facilitates increased awareness of ecosystem issues, conservation and stewardship.

Through the partnership, USGS provides valuable synthesis and interpretation of scientific measurements, helping to quantify environmental patterns, identify areas of impairment and through time, detect changes and trends related to land use and climate change. These results are used to implement follow-up studies with Coast Salish and partners seeking improved understanding of ecosystem vulnerability. The information collected during the annual Tribal Journeys can be used to advise Coast Salish Leadership in making policy decisions regarding Salish Sea resources.

3. **Tribe:** Swinomish Indian Tribal Community
4. **Project Location:** Salish Sea: Final location Quinault, WA.
5. **Eligible Activities to be Addressed:**
 - a. Activity C.1.4 Provide education and technical assistance to prevent and reduce releases of pollution.
 - b. Activity B.1.1 Use complete, accurate, and recent information in shoreline planning and decision making at the site-specific and regional levels.
 - c. Activity D.5.3 Enable and encourage residents to take informed stewardship actions addressing infiltration, pollution reduction, habitat improvement, forest cover, soil development, critical areas, reductions in shoreline armoring, and specific actions identified in sub-strategy 5.1.

In addition, the research and monitoring addresses priorities identified by Coast Salish Tribal leaders and scientists concerning climate change and land use impacts on water quality and habitats that by threaten traditional foods upon which many Tribes depend. Quantitative basin-scale variability in marine water quality and the influence of fluvial runoff (temperature, pH, turbidity) and coastal upwelling (pH and dissolved oxygen) are mapped through time to characterize processes influencing estuarine conditions which repeated annually, provide fundamental science to detect and assess estuarine responses to climate change (<http://www.coastsalishgathering.com/01gathering/proceedings.shtml>). Documents such as these identify issues of exceptional concern among the broad scope of all Puget Sound protection and restoration issues.

6. **Proposed Starting and Ending Dates:** January 1, 2013-December 31, 2013
7. **Project Coordinator:** Charles O'Hara, Swinomish Indian Tribal Community Planning Department, 11430 Moorage Way, La Conner, Wash. 360-466-4047 (fax), 360-466-7200
8. **Project Narrative:**
 - a. **Need for Project:** The Tribal Journey's Water Quality Project has grown into a meaningful trans-boundary data collection and information sharing tool for Tribes, First Nations, federal (EPA) and state (WA Department of Ecology) agencies. Results are examined with Coast Salish partners, shared to the public via the web (www.usgs.gov/coastsalish) and through public presentations (<http://online.wr.usgs.gov/calendar/2009/oct09.html>), and are published in USGS and Coast Salish reports (Akin and Grossman, 2009; 2010, Akin and Grossman, 2011 in review).

Plans: TJWQP staff are actively planning for the 2013 (TJWQP year 6) Journey to Quinault and solicit assistance through this funding opportunity to conduct, analyze and

report on the measurements made along the Tribal Journey. During the 2013 Tribal Journey to Quinault, the TJWQP proposes to monitor water-properties (surface-water temperature, salinity, pH, dissolved-oxygen, and turbidity) along Tribal Journey pathways. Data will be compared using Washington State Water Quality criteria, highlighting the variability in water-quality across the Salish Sea. The 2013 Journey data will be compared against previous years Journey results to highlight areas of concern and potential sites for future special studies by the TJWQP. This proposal section is a key element that provides information for the Puget Sound Partnership Action Plan under international outreach, public and cross agency information sharing.

Justification:

The TJWQP enters its sixth year in 2013 and has built strong collaborative relationships and scientific capacity to capture summer water quality conditions and quantify variability across the vast Salish Sea region. The proposed work will enable the TJWQP coordinator to accomplish collection of data from canoes along principal routes of the Tribal Journey and their analyses relative to findings from 2008-2013. The canoe track data are unique in mapping out spatial patterns at multiple scales, detecting large-scale oceanographic/climate and site-scale land-use influences. This funding will also allow the project to develop outreach materials/presentations for participating Tribal/First Nation communities to learn more about how changes in water-quality are impacting their environment and lifeways.

b. Project Tasks, Outputs, and Outcomes

Project Objectives and Tasks:

The Objectives of the Tribal Water Quality Project are three-fold:

1. Gather water-quality data across the Salish Sea to quantify variability, detect changes and trends, and identify impaired water bodies (primarily during the summer Tribal Journey).
 - a. ***Project Planning and Coordination***
 - i. ***Facilitative and Administrative Tasks –***
 - *Secure and manage funding,*
 - *QAPP addendum development,*
 - *Attend monthly Canoe Journey meetings to plan monitoring routes and study logistics with Canoe Families (finalized by mid-June),*
 - *Secure instrumentation and supplies for monitoring, and*
 - *Recruit, coordinate with, and manage technicians/volunteers*
 - b. ***Data Collection – Canoe Tracks***
 - i. ***Support Technicians/Volunteers/Collect Water Quality Data –***
 - *Assemble instrument packages and supplies for all routes prior to deployment,*
 - *Deliver technicians/volunteers and equipment to the start of the routes,*

- *Coordinator will serve as technician to operate equipment and collect data along one route*
 - *Provide needed assistance for technicians on each of the routes to aid in trouble-shooting*
 - *Ensure that quality control procedures outlined in the QAPP are implemented.*
2. **Analyze data and synthesize results of TJWQP data results into maps, GIS data layers, and reports for public dissemination.**
- a. **Process and Analyze Data: (A) Canoe Tracks and (B) Special Projects –**
- i. *The TJWQP Coordinator will be responsible for:*
- *Data entry and record keeping,*
 - *Apply data quality criteria procedures to datasets,*
 - *Analyze data; includes obtaining the supporting environmental (meteorological observations, upwelling indices, tides and currents, and river discharge) datasets used to aid interpretation of TJWQP results.*
 - *Facilitate additional analyses with USGS scientists, and*
 - *Co-author reports, posters, brochures, websites, and presentations disseminated online, and at regional meetings/conferences.*
 - *Work with USGS - Coastal and Marine Geology to maintain a web-based data query system through their 'InfoBank' to facilitate dissemination of TJWQP data to Tribes, First Nations, and other interested agencies or academic institutions.*
<http://walrus.wr.usgs.gov/infobank/>
3. **Continue to develop the TJWQP outreach materials and strategic plan.**
- a. **Project Outreach**
- i. *Develop web-based Tribal Journey Water-Quality Project outreach materials for effective dissemination of project data, accomplishments, and contributions to Salish Sea science.*
- ii. *Travel to participating Tribal/First Nation communities to report out on project findings and accomplishments.*
- b. **Conduct/Attend meetings to gather project input from:**
- i. *Tribal/First Nation Leadership (presentation at 2013 Coast Salish Gathering)*
- ii. *Northwest Indian Fisheries Commission – Coordinated Tribal Water Quality Group*
- iii. *Quarterly project review with TJWQP Partners – USGS, Northwest Indian College, Western Washington University, University of Washington, and others*

Outcomes:

Continuation of the water-quality data collection of the Salish Sea and expanding the research to include focused studies of temporal and topical issues of concern to Coast Salish (for example water-quality moorings) strengthen the partnerships and collaborations toward shared projects, information sharing, and trans-boundary opportunities, trainings and creating and enhancing communications and tools for sharing results with the public.

1. Conduct data collection, analyses, and provide report of the 2013 Tribal Journey Water Quality Project – Journey to Quinault
2. Generate a draft progress report of results that examine the variability of the first 6-years of track data and mooring results
3. Update website with 2013 results, presentations, and public outreach opportunities

Synergies:

The canoe track results are combined with additional “special” studies that are not part of this solicitation. Special studies include collection and analysis of (1) water-property depth profiles, (2) dissolved nutrients and plankton community composition in surface waters, (3) mooring deployments that continuously measure water-properties. Special studies are developed and conducted with partners as part of USGS-Coast Salish-partner efforts to examine (1) the temporal and spatial variability of water properties shaping nearshore habitat availability and gradients in habitat structure influenced by climate change, land use, and regional oceanography, (2) the spatial relation of nutrients and plankton community structure, (3) the extent of harmful algal blooms and the processes shaping them. By providing spatial, time-series and process-based studies and sharing infrastructure in the form of equipment, expertise and personnel, these activities complement and add capacity to Coast Salish tribes and First Nations to assess habitat availability, change and impacts to First Foods and culture..

c. Project Timeline

Objective 1: Gather Environmental Data	Sub-Task	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	NOV	DEC
Task 1A Project Planning and Coordination	Administrative Tasks											
	QAPP Addendum Development											
	Monthly Meetings w/ Canoe Families											
Task 1B Data Collection Canoe Tracks	Support Technicians/Collect WQ Data											
Objective 2: Data Analysis and Reporting	Sub-Task											
Task 2A Canoe Track Data Processing and Analysis	Data Entry and Record Keeping											
	Data Analysis											
	Reporting											

	Supporting research and development												
Objective 3: Strategic Planning	Sub-Task												
Task 3A Project Outreach	Develop/Implement Outreach opportunities												
Task 3A Future Project Planning	Facilitate Planning for TJWQP Future												

9. **Budget- Total Budget for FY12:**

Budget Narrative:

The proposed EPA FY12 budget will be used to fund the Tribal Journey Coordinator position. This position is the highest priority for funding because the responsibilities include program management, coordination, data collection and analysis, as well as reporting and outreach for the TJWQP. If the award is granted, the Tribal Journey Coordinator position will be funded at 50 % FTE from January 2013 through December 2013. Funds will also be used to cover travel associated with the data collection phase of the TJWQP. Swinomish Indirect costs have been waived for this project.

Detail Budget

Tribal Journey Water Quality Project FY12 Budget:

SALARY/BENEFITS	Per Hr	Hours	FTE	Total Cost	EPA FY12 Contribution to Project
Tribal Journey Coordinator	\$ 22.95	1040	50%	\$ 23,868	
Total		1040			\$ 23,868

BENEFITS	Fringe			Total Cost	
Tribal Journey Coordinator	54%			\$ 12,889	
Total					\$ 12,889

TRAVEL	Cost	Quantity		Total	
Mileage: Car	\$ 0.55	1500		\$ 825	
Per Diem (WA \$61/BC \$118)	\$ 90	20		\$ 1,790	
Lodging (BC \$ 159)	\$ 159	2		\$ 318	
WA Ferries (\$26 round trip)	\$ 26	1		\$ 26	
BC Ferries (\$140 round trip)	\$ 140	2		\$ 280	
Total				\$ 3,239	\$ 3,239

DIRECT TOTAL					\$ 39,996
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<i>Objective 1: Gather Salish Sea Environmental Data</i>	Sub-Task	Tribal Staff	Hours	Price (\$/hr)	Salary	Fringe (54% of salary)	Travel	EPA Request
Task 1A Project Planning and Coordination	Facilitate and Administrative Tasks	Coordinator	180	\$22.95	\$4,131	\$2,231		\$6,362
	QAPP Addendum Development	Coordinator	20	\$22.95	\$459	\$248		\$707
	Monthly Meetings with Canoe Families	Coordinator	80	\$22.95	\$1,836	\$991	\$789	\$3,616
Task 1B Data Collection Canoe Tracks	Support Technicians/Collect WQ Data	Coordinator	200	\$22.95	\$4,590	\$2,479	\$2,302	\$9,371
	Objective 1 Totals		480		\$ 11,016	\$5,949	\$3,091	\$20,056
<i>Objective 2: Data Analysis and Reporting</i>	Sub-Task	Tribal Staff	Hours	Price (\$/hr)	Salary	Fringe (54% of salary)	Travel	Amount
Task 2A Canoe Track Data Processing and Analysis	Data Entry and Record Keeping	Coordinator	40	\$22.95	\$918	\$496		\$1,414
	Data Analysis	Coordinator	150	\$22.95	\$3,443	\$1,859		\$5,301
	Reporting	Coordinator	200	\$22.95	\$4,590	\$2,479		\$7,069
	Supporting research and development	Coordinator	40	\$22.95	\$918	\$496		\$1,414
	Objective 2 Totals		430	\$ 22.95	\$9,869	\$5,329	-	\$15,197
<i>Objective 3: Outreach and Strategic Planning</i>	Sub-Task	Tribal Staff	Hours	Price (\$/hr)	Salary	Fringe (54% of salary)	Travel	Amount
Task 3A Project Outreach	Develop/Implement Outreach opportunities	Coordinator	100	\$22.95	\$2,295	\$1,239	\$148	\$3,683
Task 3B Future Project Planning	Facilitate Planning for TJWQP Future	Coordinator	30	\$22.95	\$689	\$372		\$1,060
	Objective 3 Totals		130	\$ 22.95	\$ 2,984	\$ 1,611	\$ 148	\$ 4,743
			Hours	Price (\$/hr)	Salary	Fringe (54% of salary)	Travel	Amount
			Check	1,040	\$ 22.95	\$ 23,868	\$ 12,889	\$ 3,239

10. Project Management:

The project management will be overseen by Charles O'Hara, Swinomish Planning Director. Through regular meetings with key staff and project consultants the project's timelines, deliverables, and reports will be evaluated to insure that project goals are met. Funding for this position is written into the Swinomish Indian Tribal Community annual budget.

11. Project Cooperators:

U.S. Geological Survey –Staff time is matched through USGS for project planning, data collection, and analysis of the special projects water samples. USGS and the Department of Interior provide salary support for USGS staff involvement and equipment for use toward the project and dissemination of results.

Tribal Journey Canoe Families from across the Salish Sea volunteer space on their canoes to provide the base platform from which we conduct our research. In previous years Tribal support boats volunteered to help conduct special projects data collection.

12. Technical Review:

Technical review for the data products produced by the Tribal Journey Water Quality Project are peer-reviewed by U.S. Geological Survey technical review teams and also the Tribes/First Nations participating in the project.

13. Severability

If funds are not acquired to fulfill subsequent years, project budget, data collection, analysis and reporting will still occur with amendments made to the sampling design. The modified work plan for the base project would include canoe track data collection along one or two routes (South Puget Sound and North Georgia Strait being the primary focus) instead of five routes. Volunteer staff and equipment loans/donations will also be solicited to fulfill unmet funding needs until additional funding can be obtained. The participating Tribes/First Nations have expressed a desire for this project to continue on into the future, fully realizing the value of a long-term dataset.

14. Non-duplication

The Tribal Journey Water Quality Project is a unique baseline water-quality monitoring program with a trans-boundary focus. One aim of the TJWQP is to supplement federal, provincial, state, and Tribal water-quality data with a landscape scale set of dense spatial data collected during summer. This dataset has the ability to identify landscape and site specific oceanographic patterns across the Salish Sea. The ocean going Coast Salish canoes towing instruments make an ideal platform for sampling; as they only minimally disturb the surface layer of water when they travel

15. References

Grossman, E.E. and Grossman, S.K., (in Press), Salish Sea Surface Waters: Tribal Journey Water Quality Project (TJWQP), in xxxx (eds.) 2011 Puget Sound in Review, Annual Report of the Puget Sound Partnership Marine Water Quality Monitoring Workgroup.

Grossman, S.K., and Grossman, E.E., In review, Coast Salish and U.S. Geological Survey 2011-2012 Tribal Journey water quality project: United States Geological Survey Open-File Report 2012-XXX, X p. [In Review].

Akin, S.K., and Grossman, E.E., 2010, Coast Salish and U.S. Geological Survey 2010 Tribal Journey water quality project: United States Geological Survey Open-File Report 2010-1143, 60 p. [<http://pubs.usgs.gov/of/2010/1143/>].

Akin, S.K., Grossman, E.E., Lekanof, D., O'Hara, C., 2009, Coast Salish and U.S. Geological Survey: Tribal Journey water quality project, Coast Salish Gathering Report 2009-001, 58 p. [last accessed March 1, 2010, at <http://walrus.wr.usgs.gov/reports/reprints/TJWQP.pdf>]